

# **VAX/VMS Show Cluster Utility Reference Manual**

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This reference manual describes how to use the Show Cluster Utility to monitor and display VAXcluster activity and performance.

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# Preface

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## Intended Audience

This manual is intended for VAXcluster users, system managers, and others who routinely monitor cluster activity and performance.

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## Structure of This Document

This document is composed of four major sections.

The Format Section is an overview of the Show Cluster Utility and is intended as a quick reference guide. The format summary contains the DCL command that invokes the Show Cluster Utility, listing all command qualifiers and parameters. The usage summary describes how to invoke and exit from the Show Cluster Utility, how to direct output, and any restrictions that apply to the use of this utility. The command summary lists all commands and qualifiers that can be used within the Show Cluster environment.

The Description Section explains how to use the Show Cluster Utility.

The Qualifier Section describes each DCL command qualifier. Qualifiers appear in alphabetical order.

The Command Section describes each Show Cluster Utility command, qualifiers and parameters. This section also gives examples for command use. Commands appear in alphabetical order.

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## Associated Documents

For related information about this utility, see the *Guide to VAXclusters*.

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### Conventions Used in This Document

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Convention	Meaning
<code>RET</code>	A symbol with a one- to three-character abbreviation indicates that you press a key on the terminal, for example, <code>RET</code> .
<code>CTRL/x</code>	The phrase CTRL/x indicates that you must press the key labeled CTRL while you simultaneously press another key, for example, CTRL/C, CTRL/Y, CTRL/O. In examples, this control key sequence is shown as <code>^x</code> , for example, <code>^C</code> , <code>^Y</code> , <code>^O</code> , because that is how the system echoes control key sequences.
<code>\$ SHOW TIME</code> <code>05-JUN-1982 11:55:22</code>	Command examples show all output lines or prompting characters that the system prints or displays in the black letters. All user-entered commands are shown in red letters.
<code>\$ TYPE MYFILE.DAT</code>  . . .	Vertical series of periods, or ellipsis, mean either that not all the data that the system would display in response to the particular command is shown or that not all the data a user would enter is shown.
<code>file-spec, . . .</code>	Horizontal ellipsis indicates that additional parameters, values, or information can be entered.
<code>[logical-name]</code>	Square brackets indicate that the enclosed item is optional. (Square brackets are not, however, optional in the syntax of a directory name in a file specification or in the syntax of a substring specification in an assignment statement.)
quotation marks apostrophes	The term quotation marks is used to refer to double quotation marks ( <code>"</code> ). The term apostrophe ( <code>'</code> ) is used to refer to a single quotation mark.

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## New and Changed Features

The Show Cluster Utility for Version 4.4 contains the following new features:

- New commands:
  - DEFINE/KEY
  - DESELECT
  - MOVE
  - PAN
  - REFRESH
  - SAVE
  - SCROLL
  - SELECT
  - SET FUNCTION
  - SET AUTO\_POSITIONING
  - WRITE
- One display report instead of two. (Consequently, the SHOW command is now obsolete.)
- Definable keys and a default keypad.
- Three display windows, each containing related classes. Each window can be manipulated independently.
- Command procedures can be nested up to 16 levels deep.



## SHOW CLUSTER

The VAX/VMS Show Cluster Utility (SHOW CLUSTER) monitors nodes in a VAXcluster and displays information about cluster activity and performance. SHOW CLUSTER information covers approximately 100 fields of data, which appear in three windows. You can customize the appearance of the display and output, or use default displays for access to often-needed data. You can use SHOW CLUSTER interactively or with command procedures and user-defined default settings.

### FORMAT

### SHOW CLUSTER

#### Command Qualifiers

*/BEGINNING=time*  
*/CONTINUOUS*  
*/ENDING=time*  
*/INTERVAL=seconds*  
*/OUTPUT=file-spec*

#### Defaults

*None.*  
*None.*  
*None.*  
*/INTERVAL=15*  
*/OUTPUT=SYS\$OUTPUT*

#### Command Parameters

*None.*

### usage summary

#### Invoking

To invoke the Show Cluster Utility, specify the following command:

‡ **SHOW CLUSTER**

If you specify the command without any qualifiers, SHOW CLUSTER displays a single cluster report and then returns control to the DCL level. To invoke a continuous SHOW CLUSTER display, specify the following command:

‡ **SHOW CLUSTER/CONTINUOUS**

If you request a continuous display, you can then control report output with SHOW CLUSTER commands.

#### Exiting

By default, SHOW CLUSTER displays a single cluster report and then returns control to the DCL level. If you specify the /CONTINUOUS qualifier, cluster reports are displayed continuously. To exit from a continuous display and return to the DCL level, either specify the EXIT command or press CTRL/Z or CTRL/C.

#### Directing Output

You can direct SHOW CLUSTER output to a file or device other than to SYS\$OUTPUT by specifying the /OUTPUT qualifier with the SHOW CLUSTER command. For more information, see the description of the /OUTPUT qualifier.

#### Privileges/Restrictions

*None.*

# SHOW CLUSTER

## commands

### Syntax

command [/qualifier[, . . . ]] [parameter] [/qualifier[, . . . ]]

### SHOW CLUSTER Commands

@ (Execute Procedure)

ADD CIRCUITS

/ALL

/TYPE=ALL

/TYPE=[NO]OPEN

ADD CLUSTER

/ALL

ADD CONNECTIONS

/ALL

/TYPE=ALL

/TYPE=[NO]OPEN

ADD COUNTERS

/ALL

ADD CREDITS

/ALL

ADD ERRORS

/ALL

ADD (Field)

ADD LOCAL\_PORTS

/ALL

ADD MEMBERS

/ALL

ADD SYSTEMS

/ALL

/ID=system-id

/NODE=node-name

/TYPE=hardware-type

DEFINE/KEY

/[NO]ECHO

/[NO]ERASE

/[NO]IF\_STATE

/[NO]LOCK\_STATE

/[NO]LOG

/[NO]SET\_STATE

/[NO]TERMINATE

DESELECT

EXIT

HELP

INITIALIZE

Merge direction value

PAN direction value

REFRESH

REMOVE CIRCUITS

/TYPE=ALL

/TYPE=[NO]OPEN

REMOVE CLUSTER

REMOVE CONNECTIONS

/TYPE=ALL

/TYPE=[NO]OPEN

REMOVE COUNTERS

REMOVE CREDITS

REMOVE ERRORS

REMOVE (Field)

# SHOW CLUSTER

## Description

REMOVE LOCAL\_PORTS  
REMOVE MEMBERS  
REMOVE SYSTEMS  
    /ID=system-id  
    /NODE=node-name  
    /TYPE=hardware-type  
SAVE [file-spec]  
SCROLL direction value  
SELECT [window-name]  
SET AUTO\_POSITIONING (ON,OFF)  
SET (Field)  
    /WIDTH=field-name-width  
    /FORMAT=radix  
SET FUNCTION function-name  
SET INTERVAL  
SET SCREEN  
WRITE [file-spec]  
    /ALL

---

**DESCRIPTION** The Show Cluster Utility allows you to monitor the activity and performance of a VAXcluster. SHOW CLUSTER collects information from the systems communications services (SCS) database, the connection management database, and the CI (computer interconnect) port database, and outputs it to your terminal or to a specified device or file.

---

## 1 Invoking and Terminating SHOW CLUSTER

You invoke the Show Cluster Utility at the DCL command level by specifying the DCL command SHOW CLUSTER. By default, SHOW CLUSTER displays a single report on your terminal and returns control to the DCL command level.

If you specify the /CONTINUOUS qualifier, SHOW CLUSTER displays data continuously, and updates the display at specific intervals. If you initiate a continuous display you can then control report output with Show Cluster Utility commands.

To terminate a continuous display and return to the DCL command level, specify the SHOW CLUSTER command EXIT. You can also terminate a display session at any time by pressing CTRL/Z or CTRL/C. To interrupt SHOW CLUSTER, press CTRL/Y.

## 2 SHOW CLUSTER Report

The SHOW CLUSTER report provides over 100 fields of data. However, because data alone does not necessarily communicate meaningful information, the Show Cluster Utility provides a framework in which to manipulate the data so that it becomes useful information. This framework consists of fields, classes, and windows.

You can reference each of the fields of data by a unique name. For example, the field containing the number of datagrams received by a local system is named DGS\_RCVD. Using the field name, you can selectively remove or add a field from the SHOW CLUSTER report.

# SHOW CLUSTER

## Description

Since many of the fields contain related information, SHOW CLUSTER groups related fields into classes. For example, SHOW CLUSTER groups the number of datagrams sent (DGS\_SENT field), the number of datagrams received (DGS\_RCVD field), the number of messages sent (MSG\_SENT field), and the number of messages received (MSG\_RCVD field) into the COUNTERS class. Using the class name, you can selectively add or remove an entire class from the SHOW CLUSTER report.

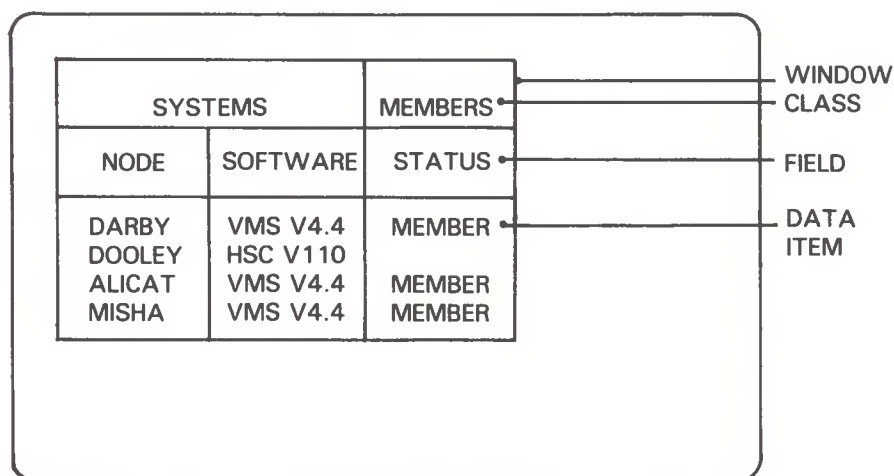
The third type of informational grouping that SHOW CLUSTER provides is the window. SHOW CLUSTER gathers data from

- SCS database
- Connection management database
- CI port database

Because the data gathered from each source is related, SHOW CLUSTER uses that organization to group data. The SHOW CLUSTER report consists of three windows: SCS, CLUSTER and LOCAL\_PORTS. The SCS window primarily contains data collected from the SCS database with the exception of the MEMBERS class data, which is collected from the connection management database. The CLUSTER window contains data collected from the connection management database, and the LOCAL\_PORTS window contains data collected from the CI port database. For example, the COUNTERS class is one class of information gathered from the SCS database that SHOW CLUSTER displays in the SCS window.

Each window is a separate entity, and you can manipulate it independently of the other two. In practical terms, this means that you can add, remove, move, or scroll the window.

The following diagram shows the relationship among fields, classes, and windows in the SHOW CLUSTER report.



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The following tables show which classes are contained in each of the three windows.

## SHOW CLUSTER

### Description

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#### SCS Window Classes

MEMBERS	Contains information about the systems actively participating in the cluster.
SYSTEMS	Contains information about systems in the cluster.
CIRCUITS	Contains information about the virtual circuits on systems in the cluster.
CONNECTIONS	Contains information about the connections established over a virtual circuit in the cluster.
COUNTERS	Contains counts of the total accumulated traffic over a connection for the life of the connection.
CREDITS	Contains information about the send and receive credit counts for connections in the cluster.

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#### Connection Management Window Class

CLUSTER	Contains general information about the cluster.
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#### CI Port Window Classes

ERRORS	Contains information about errors on the local system's CI interface to the cluster.
LOCAL_PORTS	Contains information about the local system's CI interface to the cluster.

---

For a description of the fields in each class, see the description of the ADD (Field) command.

## 3

---

### Controlling the Display

In addition to providing you with data about a cluster, SHOW CLUSTER also provides you with mechanisms to control the display of data. The mechanisms include:

- SHOW CLUSTER commands
- Default keypad which can also be redefined
- Initialization file to format display
- Command procedures to control display

Some of the operations that you can perform include:

- Changing the interval at which the display is updated
- Adding information to the display
- Changing the format of the display

# SHOW CLUSTER

## Description

- Moving a window
- Scrolling a window
- Panning the display

The following sections describe how to perform these operations.

### 3.1 Entering Commands

The Show Cluster Utility allows you to customize the display of data within fields, classes, and windows by issuing various commands during a continuous session. The Command Section describes the available SHOW CLUSTER commands in detail.

When you first enter the continuous SHOW CLUSTER environment, no command prompt is visible on the display screen. As soon as you enter a command from the terminal keyboard, the two bottom lines of the display are erased and the following SHOW CLUSTER prompt appears:

COMMAND>

SHOW CLUSTER uses the two bottom lines for displaying commands, error messages, and broadcast messages.

Updating of the continuous display stops as soon as you enter input from the terminal keyboard. When you press the RETURN key after entering a command, updating resumes until another command is entered. By default, updating takes place at 15-second intervals. If no new command is entered within 15 seconds, the information in the two bottom lines is restored with two more lines of data from the original display.

By default, SHOW CLUSTER is set to EDIT function. This means that you can perform DCL line-mode editing at the command prompt (for example, using the LEFT arrow key to move the cursor to the left, or the UP arrow key to recall the previous command). See the *VAX/VMS DCL Concepts Manual* for information on DCL line-mode editing.

**Note:** Once you set the function to PAN, SCROLL, or MOVE, the arrow keys are redefined, and DCL line-mode editing is disabled. PAN, SCROLL, and MOVE are described in Section 3.5 and in the Command Section.

To enable editing again once it has been disabled, issue the command SET FUNCTION EDIT.

### 3.2 Keypad

SHOW CLUSTER provides a predefined keypad that you can use to enter selected commands. By default, the numeric keypad is defined as follows: (Shading over a keypad command indicates that you must press the GOLD key and then the keypad key.)



# SHOW CLUSTER

## Description

PF1	PF2	PF3	PF4
GOLD 20	HELP 10	REFRESH 11	INIT 17
7 SET FUNCTION PAN 7	8 SET FUNCTION SCROLL 8	9 SET FUNCTION MOVE 9	— SET FUNCTION EDIT 18
4 ADD 4	5 REMOVE 5	6 SET AUTO_POS OFF SET AUTO_POS ON 6	, 19
1 SET 1	2 SAVE 2	3 WRITE 3	
0		• SELECT DESELECT 16	21
	0		

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If you press a SET FUNCTION key, the arrow keys are redefined to perform the specified function. For example, if you press the SET FUNCTION SCROLL key, the ↑, ↓, →, and ← arrow keys are redefined as SCROLL UP 1, SCROLL DOWN 1, SCROLL RIGHT 1, and SCROLL LEFT 1, respectively. (See the Command Section for information on specific commands.)

**Note:** If you set the function to PAN, SCROLL, or MOVE, the arrow keys are no longer defined to perform DCL line-mode editing. Only one function can be enabled at a time. To restore line-mode editing, once it has been changed to another function, issue the command SET FUNCTION EDIT.

You can also use the DEFINE/KEY command to change the definition of a key. See DEFINE/KEY command in the Command Section for more information.

### 3.3 Changing the Updating Interval

You can change the interval at which SHOW CLUSTER updates the data in the display. By default, the display is updated every 15 seconds, with the changed data displayed in reverse video. To change the rate at which data is updated, you use the SET INTERVAL command. See SET INTERVAL in the Command Section for more information.

You can also change the updating interval by issuing the following command at the DCL level:

**SHOW CLUSTER/INTERVAL=seconds**

# SHOW CLUSTER

## Description

### 3.4 Adding Information

When you invoke SHOW CLUSTER, the resulting display contains a subset of the total information available. By default, the SHOW CLUSTER display consists of the SCS window, containing the following information:

VIEW OF CLUSTER FROM SYSTEM ID 1209 NODE DARBY 15-APR-1986 15:11:34

SYSTEMS		MEMBERS
NODE	SOFTWARE	STATUS
DARBY	VMS V4.4	MEMBER
DOOLEY	HSC V110	
ALICAT	VMS V4.4	MEMBER
MISHA	VMS V4.4	MEMBER
WAYNE	VMS V4.4	MEMBER
PHENIX	HSC V110	
UPARK	HSC XSJS	
TOONA	VMS V4.4	MEMBER

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You add additional fields and/or classes with the ADD command. To specify a particular field, use the appropriate field name as specified in the description of the ADD (Field) command in the Command Section. To specify a particular class, use the appropriate ADD command as specified in the Command Section.

If you add a field or class that is not in the SCS window, SHOW CLUSTER displays the new window containing the specified class. The following diagrams display the default classes and fields of the LOCAL\_PORTS and CLUSTER windows:

LOCAL_PORTS						
NAME	LP_PORT	PORT	DGS	MSGs	OPEN_C	FORM_C
PAA0	ONLINE	2	> 2	> 2	4	0

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CLUSTER					
CL_Q	CL_V	QD_NAME	QF_V	FORMED	LAST_TRANSITION
2	3		NO	15-APR-86 09:38	30-MAR-86 14:39

ZK 5001 86

**Note:** The `AUTO_POSITIONING` function may place one window below another in such a way that it does not appear within the limits of your current display. See the next section for information on viewing data that extends beyond the limits of the display.

### 3.5 Formatting the Display

Because the Show Cluster Utility allows you to include additional fields and classes, you may produce displays that overflow the physical limits of the terminal screen. However, you can manipulate the fields, classes, and windows to customize a display to meet your needs. This can be achieved by any of the following methods:

- Removing data by class, field, or type
- Modifying field widths and formats
- Modifying the screen size
- Moving a window
- Scrolling a window
- Panning the display

#### 3.5.1 Removing Data

You may want to remove certain fields or classes to reduce the width of the display to fit the limits of your screen. Also, certain fields or classes may not be important for your particular needs. You can also remove data of a particular type, to reduce the length of the display.

You use the `REMOVE` command to remove fields, classes, or certain types of data. To remove a particular field, use the appropriate field name in the command, `REMOVE field-name`. See the `ADD (Field)` command description for a list of valid field names. To remove a particular class, use the appropriate class name in the command, `REMOVE class-name`. To remove certain types of data, use the appropriate `/TYPE=keyword` qualifier with the `REMOVE CIRCUITS`, `REMOVE CONNECTIONS`, or `REMOVE SYSTEMS` command. See the `REMOVE` commands in the Command Section for appropriate class names and keywords.

#### 3.5.2 Modifying Field and Screen Size

Another way you make the display fit the physical limits of the screen is to change the width of certain fields in the display. For example, if `SHOW CLUSTER` provides a field width that can contain any possible value and the values your cluster generates do not require that much area, you can adjust the field width with the `SET (Field)` command. See the `SET (Field)` command in the Command Section for a description of how to adjust field widths.

`SHOW CLUSTER` also allows you to adjust the size of the terminal screen. If the terminal is `DIGITAL` compatible, you can set the screen to a width of up to 512 columns by specifying an appropriate value to the `SET SCREEN` command. See the `SET SCREEN` command in the Command Section for more details.

# SHOW CLUSTER

## Description

---

### 3.5.3 Moving a Window

By default, SHOW CLUSTER operates with AUTO\_POSITIONING ON. This means that it automatically arranges the windows to take best advantage of the available display space. However, you may want to position windows manually by overriding the default. Setting AUTO\_POSITIONING to OFF allows windows to be repositioned manually.

To reposition a window, you must first select the window to be repositioned. You use the command `SELECT window-name` to specify the window name: SCS, CLUSTER, or LOCAL\_PORTS. As an alternative, you can repeatedly press the SELECT key on the keypad to cycle from one window to the next. The selected window appears highlighted.

To move a selected window, you either enter MOVE commands at the command prompt, or use the arrow keys defined as MOVE commands. Issuing the command `SET FUNCTION MOVE` redefines the ↑, ↓, →, and ← arrow keys as MOVE UP 1, MOVE DOWN 1, MOVE RIGHT 1, MOVE LEFT 1, respectively.

**Note:** The SET FUNCTION MOVE command implicitly sets AUTO\_POSITIONING to OFF.

When you issue a MOVE command, the window changes position by column (horizontally), or by line (vertically). For example, entering the command `MOVE LEFT 5` moves the window 5 columns to the left. An empty frame appears around the new window position. When you are satisfied with the position of the window, you issue the DESELECT command, which moves the window to the new position. Entering another SELECT command before the previous MOVE operation has been deselected also moves the window to its new position.

In summary, you follow these steps to move a window:

- 1 Set AUTO\_POSITIONING to OFF.
- 2 Select a window using the SELECT command.
- 3 Position the window frame by using MOVE commands.
- 4 Terminate the MOVE operation by entering the DESELECT command or another SELECT command.

**Note:** If you attempt to issue MOVE commands with AUTO\_POSITIONING ON, the window will revert to its original position when you issue the DESELECT command.

For more information, see the SELECT, SET FUNCTION, and DESELECT commands in the Command Section.

---

### 3.5.4 Scrolling a Window

The SCROLL command provides a means of quickly scanning through a window without changing the selection of information displayed in the window. Scrolling scans a window by field (horizontally) and by line (vertically). The window headings remain stationary when you scroll vertically.

To scroll the view of a window, you must first select a window by issuing the SELECT command. The selected window is highlighted. You scroll a selected window either by entering SCROLL commands at the command prompt, or by using the arrow keys defined as SCROLL commands. Issuing the command `SET FUNCTION SCROLL` redefines the ↑, ↓, →, and ←

# SHOW CLUSTER

## Description

arrow keys as SCROLL UP 1, SCROLL DOWN 1, SCROLL RIGHT 1, and SCROLL LEFT 1, respectively.

To issue the SCROLL command at the command prompt, use the format:

`SCROLL direction value`

See the SET FUNCTION and SCROLL commands in the Command Section for more information.

### 3.5.5 Panning the Display

The PAN command allows you to view the entire display from a perspective similar to that of a video camera. Panning changes your view of the display by column (horizontally) or by line (vertically). Window headings also move out of view as the windows contained within the display are panned beyond the limits of the screen.

Similar to the effect of panning a video camera, the display seems to move in the opposite direction to which you are panning. For example, the command PAN UP 5 moves the display five lines down; the command PAN RIGHT 5 moves the display five columns to the left.

To pan the display, either enter PAN commands at the command prompt, or use the arrow keys defined as PAN commands. Issuing the command SET FUNCTION PAN redefines the ↑, ↓, →, and ← arrow keys as PAN UP 1, PAN DOWN 1, PAN RIGHT 1, and PAN LEFT 1, respectively.

**Note:** Only one function can be enabled at a time. To restore line-mode editing once the function has been changed to PAN, SCROLL, or MOVE, issue the command SET FUNCTION EDIT.

To issue the PAN command at the command prompt, use the format:

`PAN direction value`

See the SET FUNCTION and PAN commands in the Command Section for more information.

## 3.6 Refreshing the Screen

Normally a continuous display is updated or *refreshed* according to the specified interval time. The Show Cluster Utility scans the software databases, extracts and stores data for each field, displays any new or changed data, and updates the time. On DIGITAL compatible terminals, reverse video highlights any changed data.

You can refresh the screen at any time by one of the following methods:

- Modifying the format of the display with the ADD, REMOVE, INITIALIZE, or SET command
- Using the REFRESH command
- Pressing CTRL/W

# SHOW CLUSTER

## Description

### 3.7 Receiving Broadcast and Error Messages

When you receive a broadcast message during a continuous SHOW CLUSTER session, the message appears at the bottom of the display screen. A multiline message fills as many lines of the display as it needs.

The last broadcast message remains on the screen until you acknowledge its receipt by entering input from the terminal in one of the following ways:

- Pressing the RETURN key
- Refreshing the screen by pressing CTRL/W
- Issuing a command

If you receive more than one broadcast message, SHOW CLUSTER waits until the next update interval to display the next message.

## 4 Creating a Startup Initialization File

To override report defaults before the display begins, you can create a startup initialization file, which the utility executes when it is invoked. In order for a startup file to execute before the display begins, you must assign the logical name SHOW\_CLUSTER\$INIT to the file name of the procedure. When invoked, SHOW CLUSTER searches for the file defined by SHOW\_CLUSTER\$INIT and, if it is found, executes the procedure before beginning the display. If SHOW\_CLUSTER\$INIT is not defined or does not include a directory specification, SHOW CLUSTER searches the current default directory. The following example shows how to assign SHOW\_CLUSTER\$INIT to a startup initialization procedure file:

```
DEFINE SHOW_CLUSTER$INIT DEVA:[JONES]SHCINI
```

In this example, SHOW CLUSTER looks for DEVA:[JONES]SHCINI.INI when it starts up.

The easiest way to create an initialization file is to follow these steps:

- 1 Define SHOW\_CLUSTER\$INIT as device:[directory]SHCINI
- 2 Customize the display using SHOW CLUSTER commands during a continuous SHOW CLUSTER session
- 3 Enter the command

```
COMMAND> SAVE SHOW_CLUSTER$INIT: .INI
```

You must specify SHOW\_CLUSTER\$INIT:.INI, because the SAVE command creates a file with a file type of .COM by default. SHOW CLUSTER looks for an .INI file when it searches for a startup initialization file.

You can edit the file that the SAVE command creates to include comments or to improve its efficiency. For more information, see the SAVE command in the Command Section.

The following startup procedure causes SHOW CLUSTER to delete the default MEMBERS class information and add three fields from the CIRCUITS class:

```
!  
!Startup Initialization File  
!  
!  
INITIALIZE  
REMOVE MEMBERS  
ADD CIR_STATE,REM_STATE,CABLE_STATUS  
SET SCREEN=132
```

You can also create an initialization file in the same manner as a command procedure. Section 4.1 describes the rules for creating a command procedure.

If you use an initialization file in noncontinuous mode and the initialization file contains a SET SCREEN command that changes the screen size, SHOW CLUSTER sets the screen to the specified size for one update interval and then resets the screen to the original size.

## 4.1 Using Command Procedures

You can also create command procedures that contain SHOW CLUSTER commands. Such files let you modify display characteristics without having to enter commands interactively. Command procedures can be used during a continuous SHOW CLUSTER display session to perform a series of commands, for example, customizing the output of the display. Any valid SHOW CLUSTER commands can be used. Command procedures can be nested 16 levels deep. Note that command procedures cannot be run from a batch job.

Each line in a command procedure is interpreted as a command unless the line begins with an exclamation point (!), in which case the line is treated as a comment. Comments are also valid at the ends of lines containing commands; everything to the right of an exclamation point is considered a comment.

Include the SHOW CLUSTER command INITIALIZE as the first command in the file. The INITIALIZE command ensures that the report is in a known state before any commands are executed to modify it.

**Note:** Do not include an EXIT command at the end of the command procedure. The EXIT command terminates SHOW CLUSTER and erases the SHOW CLUSTER display before you can see it.

The following command procedure customizes a report display:

```
!  
! Include only node field from the default display; show votes  
! and quorum for each node and for cluster as a whole.  
!  
INITIALIZE  
REMOVE SOFTWARE,STATUS  
ADD VOTES,QUORUM,CL_VOTES,CL_QUORUM
```

This command procedure removes the SOFTWARE and STATUS fields from the report display and adds fields that provide information about cluster quorum and votes.

# SHOW CLUSTER

## Description

To execute a command procedure during a continuous SHOW CLUSTER session specify the execute procedure (@) command along with the file name of the command procedure. The default file type for command procedure files is COM. The following command executes the command procedure saved in the default directory under the file name SYSMOD.COM:

```
COMMAND> @SYSMOD
```

In this example, since the file type is omitted, the default file type COM is assumed.



# SHOW CLUSTER

## Command Qualifiers

---

### COMMAND QUALIFIERS

This section describes the qualifiers that can be used with the DCL command SHOW CLUSTER to invoke the Show Cluster Utility:

- /BEGINNING=time
- /CONTINUOUS
- /ENDING=time
- /INTERVAL=seconds
- /OUTPUT=file-spec

# SHOW CLUSTER

/BEGINNING = time

---

## /BEGINNING = time

Specifies the time that the SHOW CLUSTER session is to begin. You can specify an absolute time, a delta time, or a combination of the two. Observe the syntax rules for time values described in the *VAX/VMS DCL Concepts Manual*.

If you specify a future time, your process is placed in a state of hibernation until the specified time. You should use this qualifier with the /OUTPUT and /ENDING qualifiers to run SHOW CLUSTER without direct user intervention.

---

### FORMAT

/BEGINNING=*time*

#### *time*

You can specify time as an absolute time expressed as [dd-mmm-yyyy[:]] [hh:mm:ss.cc], or a delta time expressed as [dddd-][hh:mm:ss.cc], or a combination of the two. Observe the syntax rules for time values described in the *VAX/VMS DCL Concepts Manual*.

---

### EXAMPLES

1    \$ SHOW CLUSTER/BEGINNING=04-JUL-1986:20:30

In this example, specifying an absolute time, the Show Cluster Utility produces a single display at 8:30 P.M. on July 4, 1986.

2    \$ SHOW CLUSTER/CONTINUOUS/BEGINNING=04-JUL-1986:21:30

In this example, specifying an absolute time, the Show Cluster Utility begins a continuous display at 9:30 P.M. on July 4, 1986.

3    \$ SHOW CLUSTER/BEGINNING=7-:30

In this example, specifying a delta time, the Show Cluster Utility produces a single display seven days and 30 minutes from now.

## **SHOW CLUSTER** **/CONTINUOUS**

---

### **/CONTINUOUS**

Controls whether SHOW CLUSTER runs as a continuously updating display. If you omit the qualifier, SHOW CLUSTER produces a single display and returns control to the DCL command level.

Running SHOW CLUSTER in the continuous mode allows you to use SHOW CLUSTER commands to control the display.

---

### **FORMAT        /CONTINUOUS**

---

### **EXAMPLE**

✦ **SHOW CLUSTER/CONTINUOUS**

In this example the Show Cluster Utility begins to display a continuous report that is updated every 15 seconds.

# SHOW CLUSTER

/ENDING = time

---

## /ENDING = time

Specifies the time that the SHOW CLUSTER session is to end. You can specify an absolute time, a delta time, or a combination of the two. Observe the syntax rules for time values described in the *VAX/VMS DCL Concepts Manual*.

You should use this qualifier with the /BEGINNING and /OUTPUT qualifiers to run SHOW CLUSTER without direct user intervention.

---

### FORMAT

/ENDING=*time*

#### *time*

You can specify time as an absolute time expressed as [dd-mmm-yyyy[:]][hh:mm:ss.cc], or a delta time expressed as [dddd-][hh:mm:ss.cc], or a combination of the two. Observe the syntax rules for time values described in the *VAX/VMS DCL Concepts Manual*.

---

### EXAMPLE

\* SHOW CLUSTER/CONTINUOUS/ENDING=04-JUL-1986:15:30

In this example, the Show Cluster Utility begins a continuous display now and ends the display at 3:30 P.M. on July 4, 1986.

## SHOW CLUSTER

/INTERVAL = seconds

---

### /INTERVAL = seconds

Specifies the number of seconds that display information remains on the screen before it is updated. By default, the interval time is 15 seconds.

If you use an initialization file in noncontinuous mode and the initialization file contains a SET SCREEN command that changes the screen size, SHOW CLUSTER sets the screen to the specified size for one update interval and then sets the screen to the original size.

---

### FORMAT

/INTERVAL=*seconds*

*seconds*

The number of seconds between display updates.

---

### EXAMPLE

\* SHOW CLUSTER/INTERVAL=5

In this example the Show Cluster Utility displays a continuous report that is updated every five seconds.

# SHOW CLUSTER

/OUTPUT = file-spec

---

## /OUTPUT = file-spec

Directs the output from SHOW CLUSTER to the specified file instead of the current SYS\$OUTPUT device. You can also direct output to a particular device if the device name specified is valid; if it is not, SHOW CLUSTER assumes it is a file name.

When you use the /OUTPUT qualifier, SHOW CLUSTER output is always in printable file format, regardless of the device type specified. The output can be up to 132 columns wide and can be directed to any file, terminal, or print device.

You can also direct output to a file with the WRITE command. See the Command Section for more detail.

---

### FORMAT

*/OUTPUT=file-spec*

#### *file-spec*

The name of the file to which SHOW CLUSTER output is directed. The default file name is SHOW\_CLUSTER.LIS.

---

### EXAMPLES

**1**    *\$ SHOW CLUSTER/OUTPUT=[OMALLEY] CLUSTER*

In this example the Show Cluster Utility produces one report and directs it to the file CLUSTER.LIS;1 in the directory OMALLEY.

**2**    *\$ SHOW CLUSTER/OUTPUT=[WARREN] CLUSTER.RPT;1*

In this example the Show Cluster Utility produces one report and directs it to the file CLUSTER.RPT;1 in the directory WARREN.

# SHOW CLUSTER

## Commands

---

### COMMANDS

Once you initiate a continuous SHOW CLUSTER display session, you can use SHOW CLUSTER commands to control the session. This section describes each of the SHOW CLUSTER commands.

# SHOW CLUSTER

@ (Execute Procedure)

---

## @ (Execute Procedure)

Executes a command procedure file that contains SHOW CLUSTER commands.

---

### FORMAT

@ *file-spec*

---

#### command parameters

##### *file-spec*

Specifies the name of the file that contains the commands to be executed. If you omit the file type, the default file type COM is used. No wildcard characters are allowed in the file specification.

---

#### command qualifiers

*None.*

---

### DESCRIPTION

The execute procedure (@) command allows you to execute a set of SHOW CLUSTER commands that is contained in a file. For example, a file might contain a set of commands to customize a SHOW CLUSTER display. You can use any valid SHOW CLUSTER commands in the command procedure.

You can nest command procedures up to 16 levels deep.

SHOW CLUSTER looks for the command procedure in the directory specified by the logical name SHOW\_CLUSTER\$INIT. If SHOW\_CLUSTER\$INIT is not defined or does not include a directory specification, the utility looks for the command procedure in the current default directory.

---

### EXAMPLE

COMMAND> @MYFILE

The command in this example executes the command procedure MYFILE.COM. Because no file type is specified, the file type defaults to COM.



---

## ADD CIRCUITS

Adds all currently enabled CIRCUITS class fields to the SHOW CLUSTER display. The CIRCUITS class contains information about the virtual circuits on systems in the cluster.

---

### FORMAT

**ADD CIRCUITS** [/qualifier[, . . . ]]

#### command parameters

*None.*

#### command qualifiers

**/ALL**

Specifies that all fields in this class be added to the display.

**/TYPE=ALL**

Specifies that all types of circuits be included in the display, including formative, open, and closing circuits. By default, the ADD CIRCUITS command without any qualifiers displays all types of circuits.

**/TYPE=OPEN**

**/TYPE=NOOPEN**

Controls whether either open circuits or nonopen circuits are added to the display.

---

### DESCRIPTION

The ADD CIRCUITS command adds CIRCUITS class information to the SHOW CLUSTER display. This information includes data for all currently enabled fields in the CIRCUITS class. By default, the RPORT\_NUM (remote port number), RP\_TYPE (remote port type), and CIR\_STATE (circuit state) fields are enabled. For a list of valid CIRCUITS class fields, see the ADD (Field) command.

You use the ADD CIRCUITS command together with the REMOVE CIRCUITS command to turn the display of CIRCUITS class information on and off. If you remove the CIRCUITS class from the display and add it again without changing any fields, all of the original fields are once again displayed. If, however, you remove the CIRCUITS class and add new CIRCUITS class fields, all previously enabled fields are disabled, and only the newly added fields are displayed.

---

### EXAMPLES

**1** COMMAND> ADD CIRCUITS

This command adds CIRCUITS class information to the display. This information includes all types of circuits for all enabled CIRCUITS class fields.

## SHOW CLUSTER

### ADD CIRCUITS

2 **COMMAND> ADD CIRCUITS/TYPE=OPEN**

This command adds all open circuits to the SHOW CLUSTER display.

3 **COMMAND> REMOVE CIRCUITS**  
**COMMAND> ADD RP\_OWNER**  
**COMMAND> REMOVE CIRCUITS**  
.  
.  
.  
**COMMAND> ADD CIRCUITS**

The ADD CIRCUITS command adds CIRCUITS class information to the SHOW CLUSTER display. The REMOVE CIRCUITS command removes the CIRCUITS class from the display. The ADD RP\_OWNER command adds the CIRCUITS class field RP\_OWNER to the display. As a result, all other CIRCUITS class fields are disabled. When the CIRCUITS class is removed and added again, only the RP\_OWNER field is displayed.

---

## ADD CLUSTER

Adds all currently enabled CLUSTER class fields to the SHOW CLUSTER display.

---

### FORMAT

### ADD CLUSTER

#### command parameters

*None.*

#### command qualifier

**/ALL**

Specifies that all fields in this class be added to the display.

---

### DESCRIPTION

The ADD CLUSTER command adds CLUSTER class information to the SHOW CLUSTER display. This information includes data for all currently enabled fields in the CLUSTER class. By default, the CLUSTER class includes CL\_QUORUM (cluster quorum), CL\_VOTES (cluster votes), QD\_NAME (quorum disk name), QF\_VOTE (quorum disk contributes a vote), FORMED (when quorum was formed), LAST\_TRANSITION (last change in cluster membership). For a list of valid CLUSTER class fields, see the ADD (Field) command.

You use the ADD CLUSTER command together with the REMOVE CLUSTER command to turn the display of CLUSTER class information on and off. If you remove the CLUSTER class from the display and add it again without changing any fields, all of the original fields are once again displayed. If, however, you remove the CLUSTER class and add new CLUSTER class fields, all previously enabled fields are disabled, and only the newly added fields are displayed.

---

### EXAMPLES

**1**   COMMAND> **ADD CLUSTER**

This command adds CLUSTER class information to the display. This information includes all enabled CLUSTER class fields.

**2**   COMMAND> **REMOVE CLUSTER**  
      COMMAND> **ADD CL\_QUORUM**  
      COMMAND> **REMOVE CLUSTER**  
      .  
      .  
      COMMAND> **ADD CLUSTER**

The ADD CLUSTER command in this example adds CLUSTER class information to the SHOW CLUSTER display. The first command removes the CLUSTER class from the display. The second command, ADD CL\_QUORUM, adds the CLUSTER class field CL\_QUORUM to the display. As a result, all other CLUSTER class fields are disabled. When the CLUSTER class is removed and added again, only the CL\_QUORUM field is displayed.

# SHOW CLUSTER

## ADD CONNECTIONS

---

## ADD CONNECTIONS

Adds all currently enabled CONNECTIONS class fields to the SHOW CLUSTER display.

---

### FORMAT

**ADD CONNECTIONS** *[/qualifier[, . . . ]]*

#### command parameters

*None.*

#### command qualifiers

**/ALL**

Specifies that all fields in this class be added to the display.

**/TYPE=ALL**

Specifies that all types of connections on each circuit are displayed. By default the ADD CONNECTIONS command without any qualifiers, displays all types of connections.

**/TYPE=OPEN**

**/TYPE=NOOPEN**

Controls whether either open connections or nonopen connections are added to the SHOW CLUSTER display.

---

### DESCRIPTION

The ADD CONNECTIONS command adds CONNECTIONS class information to the SHOW CLUSTER display. This information includes data for all currently enabled fields in the CONNECTIONS class. By default, the LOC\_PROC\_NAME (local process name) and CON\_STATE (connection state) fields are enabled. For a list of valid CONNECTIONS class fields, see the ADD (Field) command.

You use the ADD CONNECTIONS command together with the REMOVE CONNECTIONS command to turn the display of CONNECTIONS class information on and off. If you remove the CONNECTIONS class from the display and add it again without changing any fields, all of the original fields are once again displayed. If, however, you remove the CONNECTIONS class and add new CONNECTIONS class fields, all previously enabled fields are disabled, and only the newly added fields are displayed.

---

### EXAMPLES

**1**

COMMAND> ADD CONNECTIONS

This command adds CONNECTIONS class information to the display. This information includes all enabled CONNECTIONS class fields.

**2**

COMMAND> ADD CONNECTIONS/TYPE=OPEN

This command adds all Open connections to the SHOW CLUSTER display.

## SHOW CLUSTER ADD CONNECTIONS

```
3  
COMMAND> REMOVE CONNECTIONS  
COMMAND> ADD SCS_STATE  
COMMAND> REMOVE CONNECTIONS  
.  
.  
COMMAND> ADD CONNECTIONS
```

The ADD CONNECTIONS command adds CONNECTIONS class information to the SHOW CLUSTER display. The first command removes the CONNECTIONS class from the display. The second command, ADD SCS\_STATE, adds the CONNECTIONS class field SCS\_STATE to the display. As a result, all other CONNECTIONS class fields are disabled. When the CONNECTIONS class is removed and added again, only the SCS\_STATE field is displayed.

# SHOW CLUSTER

## ADD COUNTERS

---

## ADD COUNTERS

Adds all currently enabled COUNTERS class fields to the SHOW CLUSTER display.

---

### FORMAT

### ADD COUNTERS

#### command parameters

*None.*

#### command qualifier

**/ALL**

Specifies that all fields in this class be added to the display.

---

### DESCRIPTION

The ADD COUNTERS command adds COUNTERS class information to the SHOW CLUSTER display. This information includes data for all currently enabled fields in the COUNTERS class. By default, the DGS\_SENT (datagrams sent), DGS\_RCVD (datagrams received), MSGS\_SENT (messages sent), and MSGS\_RCVD (messages received) fields are enabled. For a list of valid COUNTERS class fields, see the ADD (Field) command.

You use the ADD COUNTERS command together with the REMOVE COUNTERS command to turn the display of COUNTERS class information on and off. If you remove the COUNTERS class from the display and add it again without changing any fields, all of the original fields are once again displayed. If, however, you remove the COUNTERS class and add new COUNTERS class fields, all previously enabled fields are disabled, and only the newly added fields are displayed.

---

### EXAMPLES

1

```
COMMAND> ADD COUNTERS
```

This command adds COUNTERS class information to the display. This information includes all enabled COUNTERS class fields.

2

```
COMMAND> REMOVE COUNTERS
COMMAND> ADD MSGS_SENT
COMMAND> REMOVE COUNTERS
```

```
.
```

```
COMMAND> ADD COUNTERS
```

The ADD COUNTERS command in this example adds COUNTERS class information to the SHOW CLUSTER display. The first command removes the COUNTERS class from the display. The second command, ADD MSGS\_SENT, adds the COUNTERS class field MSGS\_SENT to the display. As a result, all other COUNTERS class fields are disabled. When the COUNTERS class is removed and added again, only the MSGS\_SENT field is displayed.



---

## ADD CREDITS

Adds all currently enabled CREDITS class fields to the SHOW CLUSTER display.

---

### FORMAT

### ADD CREDITS

#### command parameters

*None.*

#### command qualifier

**/ALL**

Specifies that all fields in this class be added to the display. By default, the ADD CREDITS command, used without any qualifiers, displays all the CREDITS class fields.

---

### DESCRIPTION

The ADD CREDITS command adds CREDITS class information to the SHOW CLUSTER display. This information includes data for all currently enabled fields in the CREDITS class. By default, all CREDITS class fields are enabled. For a list of valid CREDITS class fields, see the ADD (Field) command.

You use the ADD CREDITS command together with the REMOVE CREDITS command to turn the display of CREDITS class information on and off. If you remove the CREDITS class from the display and then add it again without changing any fields, all of the original fields are once again displayed. If, however, you remove the CREDITS class and add new CREDITS class fields, all previously enabled fields are disabled, and only the newly added fields are displayed.

---

### EXAMPLES

**1**    **COMMAND> ADD CREDITS**

This command adds CREDITS class information to the display. This information includes all enabled CREDITS class fields.

**2**    **COMMAND> REMOVE CREDITS**  
      **COMMAND> ADD MIN\_REC**  
      **COMMAND> REMOVE CREDITS**  
      .  
      .  
      .  
      **COMMAND> ADD CREDITS**

The ADD CREDITS command in this example adds CREDITS class information to the SHOW CLUSTER display. The first command removes the CREDITS class from the display. The second command, ADD MIN\_REC, adds the CREDITS class field MIN\_REC to the display. As a result, all other CREDITS class fields are disabled. When the CREDITS class is removed and added again, only the MIN\_REC field is displayed.

# SHOW CLUSTER

## ADD ERRORS

---

## ADD ERRORS

Adds all currently enabled ERRORS class fields to the SHOW CLUSTER display.

---

### FORMAT

### ADD ERRORS

#### command parameters

*None.*

#### command qualifier

**/ALL**

Specifies that all fields in this class be added to the display. By default, ADD ERRORS, used without any qualifiers, displays all the fields in the errors class.

---

### DESCRIPTION

The ADD ERRORS command adds ERRORS class information to the SHOW CLUSTER display. This information includes data for all currently enabled fields in the ERRORS class. By default, all ERRORS class fields are enabled. For a list of valid ERRORS class fields, see the ADD (Field) command.

You use the ADD ERRORS command together with the REMOVE ERRORS command to turn the display of ERRORS class information on and off. If you remove the ERRORS class from the display and add it again without changing any fields, all of the original fields are once again displayed. If, however, you remove the ERRORS class and add new ERRORS class fields, all previously enabled fields are disabled, and only the newly added fields are displayed.

---

### EXAMPLES

**1**

```
COMMAND> ADD ERRORS
```

This command adds ERRORS class information to the display. This information includes all enabled ERRORS class fields.

**2**

```
COMMAND> REMOVE ERRORS
COMMAND> ADD ERT_MAX
COMMAND> REMOVE ERRORS
.
.
COMMAND> ADD ERRORS
```

The ADD ERRORS command in this example adds ERRORS class information to the SHOW CLUSTER display. The first command removes the ERRORS class from the display. The second command, ADD ERT\_MAX, adds the ERRORS class field ERT\_MAX to the display. As a result, all other ERRORS class fields are disabled. When the ERRORS class is removed and added again, only the ERT\_MAX field is displayed.



### ADD (Field)

Enables the display of specific fields of SHOW CLUSTER information.

#### FORMAT

**ADD** *field-name*[, . . . ]

#### command parameters

#### ***field-name***

Specifies one or more of the following fields of information to be added to the display of a particular class.

#### **CIRCUITS Class**

Field Name	Description
CABLE_STATUS	Status of the circuit paths A and B. Crossed cables are also noted. Possible displays: - Paths A and B are bad. A- Path A is good. -B Path B is good. A-B Paths A and B are good. CROSSED The cables are crossed.
CIR_STATE	The state of the virtual circuit. Possible displays: CLOSED The circuit is closed. OPEN The circuit is opened. ST_REC The circuit has a start received. ST_SENT The circuit has a start sent. VC_FAIL A virtual circuit failure is in progress.
LPORT_NAME	The VAX/VMS device name of the local port associated with the circuit (PAA0, PAB0).
NUM_CONNECTIONS	The number of connections on the circuit between the local and remote system.
REM_STATE	State of the remote port. Possible displays: DISAB The remote port is disabled. ENAB The remote port is enabled. M_DISAB The remote port is in maintenance mode and is disabled. M_ENAB The remote port is in maintenance mode and is enabled. M_UNINIT The remote port is in maintenance mode and has not been initialized. UNINIT The remote port has not been initialized.

# SHOW CLUSTER

ADD (Field)

Field Name	Description
RP_FUNCTIONS	Function mask of the remote port.
RPORT_NUM	The port number of the remote port associated with the circuit.
RP_OWNER	Port number of the remote port owner.
RP_REVISION	Hardware and/or microcode revision number of the remote port.
RP_TYPE	The type of the remote port associated with the circuit. Possible displays: CI780        The remote port is a CI780. CI750        The remote port is a CI750. HSC50        The remote port is an HSC50. CINT         The remote port is a CI node tester. PASSTH       The remote port is in passthrough mode.
SCS_WAITERS	The number of connections waiting to send SCS control messages on the virtual circuit.

## CLUSTER Class

Field Name	Description
CL_QDVOTES	The number of quorum votes contributed by the quorum disk.
CL_QUORUM	The maximum quorum of all current members plus any previous CL_QUORUM value.
CL_VOTES	The total number of votes held by all cluster members.
FORMED	The time at which the cluster was formed, expressed as dd-mmm-yy hh:mm.
LAST_TRANSITION	The last time at which a system left or joined the cluster, expressed as dd-mmm-yy hh:mm.
MEMSEQ	The membership state sequence number.
QD_NAME	The full device name of the quorum disk.
QF_VOTE	Indicates whether or not the quorum disk is contributing any votes towards the cluster quorum.

# SHOW CLUSTER

ADD (Field)

## CONNECTIONS Class

Field Name	Description
CON_STATE	The state of the connection. Possible displays: ACCP_SENT An accept request has been sent. CLOSED The connection is closed. CON_ACK A connect request has been sent and acknowledged. CON_REC A connect request has been received. CON_SENT A connect request has been sent. DISC_ACK A disconnect request is acknowledged. DISC_MTCH A disconnect request is matched. DISC_REC A disconnect request has been received. DISC_SENT A disconnect request has been sent. LISTEN The connection is in the listen state. OPEN The connection is open. REJ_SENT A reject has been sent. VC_FAIL A virtual circuit has failed.
LOC_CONID	Identification number of the local side of the connection.
LOC_PROC_NAME	The name of the local process associated with the connection.
REM_CONID	Identification number of the remote side of the connection. This information does not apply for connections in the listen state.
REM_PROC_NAME	The name of the remote process associated with the connection. This information does not apply for connections in the listen state.
SCS_STATE	SCS send blocked state. If the connection is waiting to send an SCS control block message, the SCS send blocked state indicates what kind of message it is waiting to send. Possible displays: ACCP_PEND Waiting to send an accept request. CLEAR Not blocked. CON_PEND Waiting to send a connection request. CR_PEND Waiting to send credit. DCR_PEND Waiting to send credit in preparation for a disconnect. DISC_PEND Waiting to send a disconnect request. REJ_PEND Waiting to send a reject request.

# SHOW CLUSTER

ADD (Field)

## COUNTERS Class

Field Name	Description
BDT_WAITS	The number of times this connection had to wait for a buffer descriptor.
BLKS_REQ	The number of block-request data commands initiated to block transfer data from the remote system to the local system.
BLKS_SENT	The number of block-send data commands. initiated to block-transfer data from the local system to the remote system .
CR_WAITS	The number of times this connection had to wait for send credit.
DGS_DSCRD	The number of application datagrams discarded by PADRIVER.
DGS_RCVD	The number of application datagrams received by the local system over the connection from the remote system and given to SYSAP.
DGS_SENT	The number of application datagrams sent over the connection.
KB_MAPPED	The number of kilobytes of data mapped for block transfer.
KB_RCVD	The number of kilobytes of data received by the local system from the remote system through request-data commands.
KB_SENT	The number of kilobytes of data sent from the local system to the remote system through send-data commands.
MSGG_RCVD	The number of application datagram messages received over the connection.
MSGG_SENT	The number of application datagram messages sent over the connection.

## CREDITS Class

Field Name	Description
INIT_REC	The initial receive credit extended to the remote system when the connection was made.
MIN_REC	The minimum receive credit (minimum send credit required by the remote system).
MIN_SEND	The minimum send credit.
PEND_REC	The receive credit not yet extended to the remote system.
RECEIVE	The receive credit (send credit held by the remote system).
SEND	The current send credit.

# SHOW CLUSTER

ADD (Field)

## ERRORS Class

Field Name	Description
ERT_COUNT	The number of port reinitialization attempts remaining.
ERT_MAX	The total number of times a recovery from fatal port errors can be attempted by shutting down all virtual circuits and connections and reinitializing the port.
NUM_ERRORS	The number of errors that have been logged on the port since the system was booted. This number includes errors encountered in reinitialization attempts as well as recoverable errors, such as virtual circuit failure. This is the same error count as that displayed by the DCL command SHOW DEVICE.

## LOCAL\_PORTS class

Field Name	Description										
BUFF_DESCR	The number of buffer descriptors in use.										
CMDS_QUEUED	The total number of messages, datagrams, and port commands queued for transmission at all priorities by the port.										
COUNTER_OWNER	The name of the process currently using the port traffic counters.										
DGI_MAP	A 16-bit bit map displayed as four hexadecimal digits. Each bit in the map represents a port in the cluster from which datagram reception has been disabled.										
DG_OVRHD_SIZE	The number of bytes of port header, SCS header, and DECnet header in a datagram.										
DGS_FREE	The number of free datagram buffers currently queued for receive commands.										
FORM_CIRCS	The number of formative circuits (circuits in the process of opening) from the port.										
FREE_BUFF	The number of CI buffer descriptors free for use.										
LB_STATUS	The loopback status of each cable from the port to the star coupler. Possible displays: <table><tr><td>A-B</td><td>Loopback tests pass on paths A and B.</td></tr><tr><td>A-</td><td>Loopback tests pass on path A.</td></tr><tr><td>-B</td><td>Loopback tests pass on path B.</td></tr><tr><td>-</td><td>Loopback tests failed on paths A and B.</td></tr><tr><td>N/A</td><td>Loopback tests are not being done.</td></tr></table>	A-B	Loopback tests pass on paths A and B.	A-	Loopback tests pass on path A.	-B	Loopback tests pass on path B.	-	Loopback tests failed on paths A and B.	N/A	Loopback tests are not being done.
A-B	Loopback tests pass on paths A and B.										
A-	Loopback tests pass on path A.										
-B	Loopback tests pass on path B.										
-	Loopback tests failed on paths A and B.										
N/A	Loopback tests are not being done.										

# SHOW CLUSTER

ADD (Field)

Field Name	Description
LOG_MAP	A 16-bit bit map displayed as four hexadecimal digits. Each bit in the map represents a port in the cluster for which an error was logged. Errors are logged when data provided by the configuration database on the local system conflicts with data provided by the remote system. When a conflict is discovered and an error is logged, virtual circuits to the remote system can no longer be established.
LP_STATUS	The status of the local port. Possible displays: OFFLINE      The port is off line. ONLINE        The port is on line.
LP_TYPE	The device type of the port (CI780, CI750, HSC).
MAX_PORT	The largest port number to which a virtual circuit open is attempted.
MSG_FREE	The number of free message buffers currently queued for receives commands.
MSG_HDR_SIZE	The number of bytes of port header and SCS header in a message.
NAME	The VAX/VMS device name of the local port.
OPEN_CIRCS	The number of virtual circuits open from the port.
POOL_WAITERS	The number of processes waiting for nonpaged pool resources for message buffers.
PORT_NUM	The port number assigned to the port.
PRT_MAP	A 16-bit bit map displayed as three hexadecimal digits. Each bit in the map represents a port in the cluster that has been recognized by the host system.
RSPS_QUEUED	The total number of responses of all kinds received from the port but not yet processed.

## MEMBERS Class

Field Name	Description
ACK_LIM	The maximum number of VAXcluster messages the remote system can receive before sending an acknowledgment reply.
ACKR_SEQ	The sequence number of the last acknowledgment received over the VAXcluster connection.

# SHOW CLUSTER

ADD (Field)

Field Name	Description
CNX_STATE	The state of the VAXcluster connection. Possible displays: ACCEPT      The initial connection is accepted. CLOSED      The connection is closed. CONNECT      The initial connection is being accepted. DEAD      No connection is possible. DISCONNECT      A disconnection is in progress. NEW      No attempt to make a connection has been made yet. OPEN      The connection is open. REACCEPT      The connection is accepting the reconnect request. RECONNECT      The connection is attempting to reconnect. WAIT      A timeout is in progress.
CSID	The cluster system identification number. This number is unique over the life of the cluster. Unlike SYS_ID, this identification number may change when the system reboots.
DIR_WT	The lock manager distributed directory weight.
PROTOCOL	The protocol version number and ECO level of the connection management software.
QDVOTES	The number of votes the remote system recommends be contributed by the quorum disk. Normally, the cluster manager sets this number using the SYSGEN parameter QDSKVOTES.
QF_ACTIVE	Indicates whether the remote system's quorum file is accessible.
QF_SAME	Indicates whether the local and remote systems agree about which disk is the quorum disk.
QUORUM	The recommended quorum value set for the remote system. Normally, the cluster manager sets the recommended quorum value for a node using the SYSGEN parameter QUORUM.
RCVD_SQ	The sequence number of the last message received over the VAXcluster connection.
SEND_SQ	The sequence number of the next message to be sent over the VAXcluster connection.

# SHOW CLUSTER

ADD (Field)

Field Name	Description
STATUS	The status of the node in the cluster. Possible displays:  blank      The system is not being considered as a cluster member.  BRK__MEM      The system is a member of the cluster, but the connection manager has lost communication with it.  BRK__NEW      The system has just booted, but has not yet joined the cluster and the connection manager has lost communication with it.  BRK__NON      The connection manager has lost communication with the system and the system is no longer a member of the cluster.  BRK__REM      The connection manager has lost communication with the system, and the system has been removed from the cluster.  MEMBER      The system is participating in the cluster. (A default SYSGEN parameter allows a 90-second delay before a failing system is removed from cluster membership status.)  NEW      The system has just booted, but has not yet joined the cluster. If this system would normally be a member of the cluster and is displaying NEW in this field, you can expect that the display will eventually change to MEMBER.  NON      The system is not a member of the cluster.  REMOVED      The system has been removed from the cluster.
TRANSITION__TIME	The time of the system's last change in membership status (see the STATUS field).
UNACKED	The number of unacknowledged VAXcluster messages received by the remote system.
VOTES	The number of votes the remote node contributes toward quorum. Normally, the cluster manager sets this number with the SYSGEN parameter VOTES.
WARMCDRPS	The number of CDRPs on the CDRP free queue.



# SHOW CLUSTER

ADD (Field)

## SYSTEMS Class (for CLUSTER report)

Field Name	Description
DG_SIZE	The maximum number of bytes of application data in datagrams sent over the circuit.
HW_TYPE	The system hardware type (V780, V785, V750, HS50).
HW_VERS	The revision level of the computer interconnect hardware on the remote system.
INCARNATION	A unique 16-digit hexadecimal number established when the system is booted.
INCN_TIME	The incarnation number expressed as a time (dd-mmm-yy hh:mm).
MSG_SIZE	The maximum number of bytes of application data in messages sent over the circuit.
NODE	The node name of the remote system. Normally, the cluster manager sets the node name using the SYSGEN parameter SCSNODE. The node name should be the same as the DECnet node name.
NUM_CIRCUITS	The number of virtual circuits between the local system and remote systems.
SOFTWARE	The name and version of the operating system currently running on the remote system.
SYS_ID	The identification number of the remote system. Normally, the cluster manager sets this number using the SYSGEN parameters SCSSYSTEMID and SCSSYSTEMIDH. This number should be the same as the DECnet node number.

If you specify more than one field name, insert a comma between each one and the next.

### command qualifiers

*None.*

### DESCRIPTION

The ADD (Field) command enables and adds specific fields of information to a SHOW CLUSTER display. When you add a field for a class that is not currently being displayed, the class heading of that field is added to the display.

To remove a field from the SHOW CLUSTER display, use the REMOVE (Field) command.

### EXAMPLES

**1** COMMAND> ADD SEND

This command enables the CREDITS class field SEND and adds it to the SHOW CLUSTER display.

# SHOW CLUSTER

## ADD (Field)

2

COMMAND> ADD REM\_STATE,REM\_CONID,LOC\_CONID

This command enables the CIRCUITS class field REM\_STATE and the CONNECTIONS class fields REM\_CONID and LOC\_CONID, and adds them to the SHOW CLUSTER display.

---

## ADD LOCAL\_PORTS

Adds all currently enabled LOCAL\_PORTS class fields to the SHOW CLUSTER display.

---

### FORMAT

### ADD LOCAL\_PORTS

---

#### command parameters

*None.*

---

#### command qualifier

**/ALL**

Specifies that all fields in this class be added to the display.

---

### DESCRIPTION

The ADD LOCAL\_PORTS command adds LOCAL\_PORTS class information to the SHOW CLUSTER display. This information includes data for all currently enabled fields in the LOCAL\_PORTS class. By default, the NAME, STATUS, PORT\_NUM (port number), DGS\_FREE (free datagrams queued), and MSGS\_FREE (free messages queued), OPEN\_CIRCS (open circuits), FORM\_CIRCS (formative circuits) fields are enabled. For a list of valid LOCAL\_PORTS class fields, see the ADD (Field) command.

You use the ADD LOCAL\_PORTS command together with the REMOVE LOCAL\_PORTS command to turn the display of LOCAL\_PORTS class information on and off. If you remove the LOCAL\_PORTS class from the display and add it again without changing any fields, all of the original fields are once again displayed. If, however, you remove the LOCAL\_PORTS class and add new LOCAL\_PORTS class fields, all previously enabled fields are disabled, and only the newly added fields are displayed.

---

### EXAMPLES

**1**    COMMAND> ADD LOCAL\_PORTS

This command adds LOCAL\_PORTS class information to the display. This information includes all enabled LOCAL\_PORTS class fields.

**2**    COMMAND> REMOVE LOCAL\_PORTS  
      COMMAND> ADD LB\_STATUS  
      COMMAND> REMOVE LOCAL\_PORTS  
      .  
      .  
      COMMAND> ADD LOCAL\_PORTS

The ADD LOCAL\_PORTS command in this example adds LOCAL\_PORTS class information to the SHOW CLUSTER display. The first command removes the LOCAL\_PORTS class from the display. The second command, ADD LB\_STATUS, adds the LOCAL\_PORTS class field LB\_STATUS to the display. As a result, all other LOCAL\_PORTS class fields are disabled. When the LOCAL\_PORTS class is removed and added again, only the LB\_STATUS field is displayed.

# SHOW CLUSTER

## ADD MEMBERS

---

## ADD MEMBERS

Adds all currently enabled MEMBERS class fields to the SHOW CLUSTER display.

---

### FORMAT

### ADD MEMBERS

#### command parameters

*None.*

#### command qualifier

**/ALL**

Specifies that all fields in this class be added to the display.

---

### DESCRIPTION

The ADD MEMBERS command adds MEMBERS class information to the SHOW CLUSTER display. This information includes data for all currently enabled fields in the MEMBERS class. By default, the STATUS field is enabled. For a list of valid MEMBERS class fields, see the ADD (Field) command.

You use the ADD MEMBERS command together with the REMOVE MEMBERS command to turn the display of MEMBERS class information on and off. If you remove the MEMBERS class from the display and add it again without changing any fields, all of the original fields are once again displayed. If, however, you remove the MEMBERS class and add new MEMBERS class fields, all previously enabled fields are disabled, and only the newly added fields are displayed.

---

### EXAMPLES

**1**      COMMAND> ADD MEMBERS

The command in this example adds MEMBERS class information to the display. This information includes all enabled MEMBERS class fields.

**2**      COMMAND> REMOVE MEMBERS  
COMMAND> ADD VOTES  
COMMAND> REMOVE MEMBERS  
.  
.  
COMMAND> ADD MEMBERS

The ADD MEMBERS command in this example adds MEMBERS class information to the SHOW CLUSTER display. The first command removes the MEMBERS class from the display. The second command, ADD VOTES, adds the MEMBERS class field VOTES to the display. As a result, all other MEMBERS class fields are disabled. When the MEMBERS class is removed and added again, only the VOTES field is displayed.

---

## ADD SYSTEMS

Adds all currently enabled SYSTEMS class fields to the SHOW CLUSTER display.

---

### FORMAT

**ADD SYSTEMS** [/qualifier[, . . . ]]

#### command parameters

*None.*

#### command qualifier

---

##### **/ALL**

Specifies that all fields in the SYSTEMS class are added to the display.

##### **/ID = system-id**

Specifies, by system identification number, systems to be added to the SHOW CLUSTER display. The system-id number can be any system-id as displayed in the SYSID field of the SYSTEMS class.

The /ID qualifier affects all information displayed about the specified system, not just information in the SYSTEMS class display.

##### **/NODE=node-name**

Specifies, by node name, systems to be added to the SHOW CLUSTER display. The /NODE qualifier affects all information displayed about the specified node, not just information in the SYSTEMS class display.

##### **/TYPE=hardware-type**

Specifies, by hardware type, systems to be added to the SHOW CLUSTER display. You can specify any of the following hardware types:

- V750 for VAX-11/750 systems
- V780 for VAX-11/780 systems
- V785 for VAX-11/785 systems
- HS50 for HSC50 systems
- 8200 for VAX 8200 systems
- 8600 for VAX 8600 systems

The /TYPE qualifier affects all information displayed about the specified hardware type, not just information in the SYSTEMS class display.

---

### DESCRIPTION

The ADD SYSTEMS command adds SYSTEMS class information to the SHOW CLUSTER display. This information includes data for all currently enabled fields in the SYSTEMS class. By default, the NODE and SOFTWARE fields are enabled. For a list of valid SYSTEMS class fields, see the ADD (Field) command.

# SHOW CLUSTER

## ADD SYSTEMS

You use the ADD SYSTEMS command together with the REMOVE SYSTEMS command to turn the display of SYSTEMS class information on and off. If you remove the SYSTEMS class from the display and add it again without changing any fields, all of the original fields are once again displayed. If, however, you remove the SYSTEMS class and add new SYSTEMS class fields, all previously enabled fields are disabled, and only the newly added fields are displayed.

---

## EXAMPLES

**1**    `COMMAND> ADD SYSTEMS`

This command adds SYSTEMS class information to the display. This information includes all enabled SYSTEMS class fields.

**2**    `COMMAND> ADD SYSTEMS/NODE=MISHA`

This command adds the node MISHA to the SHOW CLUSTER display reporting all currently enabled information about the node.

**3**    `COMMAND> REMOVE SYSTEMS`  
`COMMAND> ADD SYS_ID`  
`COMMAND> REMOVE SYSTEMS`  
.  
.  
.  
`COMMAND> ADD SYSTEMS`

The ADD SYSTEMS command in this example adds SYSTEMS class information to the SHOW CLUSTER display. The first command removes the SYSTEMS class from the display. The second command, ADD SYS\_ID, adds the SYSTEMS class field SYS\_ID to the display. As a result, all other SYSTEMS class fields are disabled. When the SYSTEMS class is removed and added again, only the SYS\_ID field is displayed.

## DEFINE/KEY

Associates an equivalence string and set of attributes with a key on the terminal keyboard. The /KEY qualifier is required.

### FORMAT

**DEFINE/KEY** *key-name equivalence-string*

#### command parameter

#### **key-name**

Specifies the name of the key that you are defining. Use the following key names when defining keys:

Key Name	LK201	VT100-Type	VT52
PF1	PF1	PF1	[blue]
PF2	PF2	PF2	[red]
PF3	PF3	PF3	[gray]
PF4	PF4	PF4	--
KP0, KP1 through KP9	0, 1 through 9	0, 1 through 9	0, 1 through 9
PERIOD	.	.	.
COMMA	,	,	n/a
MINUS	-	-	n/a
ENTER	Enter	ENTER	ENTER
Find (E1)	Find	--	--
Insert Here (E2)	Insert Here	--	--
Remove (E3)	Remove	--	--
Select (E4)	Select	--	--
Prev Screen (E5)	Prev Screen	--	--
Next Screen (E6)	Next Screen	--	--
HELP	Help	--	--
DO	Do	--	--
F17 through F20	F17 through F20	--	--

You cannot redefine the arrow keys or the function keys 1 through 14.

#### **equivalence-string**

Specifies the string which is to be processed when you press the key. The string can be a SHOW CLUSTER command. If the string contains any spaces, enclose the equivalence string in quotation marks.



# SHOW CLUSTER

## DEFINE/KEY

### command qualifiers

---

#### ***/ECHO (default)***

#### ***/NOECHO***

Determines whether the equivalence string is displayed on your screen after the key has been pressed. You cannot use */NOECHO* with the */NOTERMINATE* qualifier.

#### ***/ERASE***

#### ***/NOERASE (default)***

Determines whether the current line is erased before the key translation is inserted.

#### ***/IF\_STATE=(state-name, . . . )***

#### ***/NOIF\_STATE***

Specifies a list of one or more states, one of which must take effect for the key definition to be in effect. If you omit the */IF\_STATE* qualifier or use */NOIF\_STATE*, the current state is used.

#### ***/LOCK\_STATE***

#### ***/NOLOCK\_STATE (default)***

Specifies that the state set by the */SET\_STATE* qualifier remain in effect until explicitly changed. If you use the */NOLOCK\_STATE* qualifier, the state set by */SET\_STATE* is in effect only for the next definable key that you press or for the next read-terminating character that you type.

The */LOCK\_STATE* qualifier can only be specified with the */SET\_STATE* qualifier.

#### ***/LOG (default)***

#### ***/NOLOG***

Controls whether the system displays a message indicating that the key definition has been successfully created.

#### ***/SET\_STATE=state-name***

#### ***/NOSET\_STATE (default)***

Causes the specified state-name to be set when the key is pressed. The state name can be any alphanumeric string.

If you omit the *SET\_STATE* qualifier or use */NOSET\_STATE*, the current state that was locked remains in effect. If you have not included this qualifier with a key definition, you can use the *SET KEY* command to change the current state.

#### ***/TERMINATE***

#### ***/NOTERMINATE (default)***

Specifies whether the current equivalence string is to be terminated (that is, processed) when the key is pressed. Pressing RETURN has the same effect as using */TERMINATE*.

The */NOTERMINATE* qualifier allows you to create key definitions that insert text into command lines, after prompts, or into other text that you are typing.



# SHOW CLUSTER

## DEFINE/KEY

---

### DESCRIPTION

The DEFINE/KEY command enables you to assign definitions to the keys on certain terminals. The terminals include VT52s, the VT100 series, and terminals with LK201 keyboards.

The equivalence string definition can contain different types of information. Definitions can consist of SHOW CLUSTER commands. When you define a key to insert a text string, use the /NOTERMINATE qualifier so that you can continue typing more data after the string has been inserted.

In most instances you will want to take advantage of the echo feature. The default setting is /ECHO. With the /ECHO qualifier set, the key definition is displayed on the screen each time you press the key.

You can use the /STATE qualifier to increase the number of key definitions available on your terminal. The same key can be assigned any number of definitions as long as each definition is associated with a different state. State names can contain any alphanumeric characters, dollar signs, and underscores. Generally, you will want to create a state name that is easy to remember and type and, if possible, one that might remind you of the types of definitions you created for that state.

---

### EXAMPLE

COMMAND> DEFINE/KEY PF3 "LOCAL\_PORT"/NOTERMINATE

The DEFINE/KEY command defines the PF3 key on the keypad to output the "LOCAL\_PORT" text string. This key could be used with the ADD key to form the ADD LOCAL\_PORT command.

# SHOW CLUSTER

## DESELECT

---

## DESELECT

Terminates the selection of a previously selected window.

---

### FORMAT

### DESELECT

#### command parameters

*None.*

#### command qualifiers

*None.*

---

### EXAMPLE

```
COMMAND> SELECT
COMMAND> MOVE RIGHT 10
.
.
COMMAND> Deselect
```

In this example, the SELECT command selects a window and highlights it. A MOVE operation is then performed on the selected window. The Deselect command terminates the selection and moves the window to its new position. If you enter another SELECT command, it automatically deselects and moves the previously selected window.

---

## EXIT

Terminates the SHOW CLUSTER display and returns control to the DCL command level. You can also type CTRL/C or CTRL/Z to exit at any time.

---

### FORMAT

### EXIT

**command  
parameters**

---

*None.*

**command  
qualifiers**

---

*None.*

---

### EXAMPLE

COMMAND> EXIT

This command terminates the SHOW CLUSTER display and returns control to the DCL command level.

# SHOW CLUSTER

## HELP

---

## HELP

Provides online help information for using the SHOW CLUSTER commands, parameters, and qualifiers.

---

### FORMAT

**HELP** [*keyword . . .*]

---

#### command parameter

#### **keyword**

Specifies the command, parameter, or qualifier for which help information is to be displayed. If you omit the keyword, HELP displays a list of available help topics, and prompts you for a particular keyword.

---

#### command qualifiers

*None.*

---

## EXAMPLES

**1**    COMMAND> **HELP INITIALIZE**

The command in this example displays help information about the SHOW CLUSTER command, INITIALIZE.

**2**    COMMAND> **HELP Fields**

The command in this example displays help information about the valid field names that can be specified with the ADD, REMOVE, and SET commands.

INITIALIZE

Resets the display using the default values for field names, class names, and field widths. It also restores any systems that were removed from the display by the REMOVE SYSTEMS command.

FORMAT

INITIALIZE

command  
parameters

None.

command  
qualifiers

None.

EXAMPLE

COMMAND> INITIALIZE

This command resets the current display to the default display and restores any systems that were removed from the display.

# SHOW CLUSTER

## MOVE

---

## MOVE

Moves a selected window to a specified position.

---

### FORMAT

**MOVE** *direction value*

---

#### command parameter

#### *direction*

Direction in which the window is to be moved. If you do not enter a direction for this parameter, SHOW CLUSTER prompts you for one. You must specify one of the following keywords:

UP  
DOWN  
RIGHT  
LEFT

#### *value*

Number of columns or lines the window is to be moved. You must specify a numeric value from 1 to 512. If you do not enter a number for this parameter, SHOW CLUSTER prompts you for one.

---

#### command qualifiers

*None.*

---

### DESCRIPTION

The MOVE command allows you to manually reposition a window on the display screen. You must first issue the command SET AUTO\_POSITIONING OFF, which disables the default automatic positioning of windows. Then select a window to be moved by using the SELECT command.

To move a selected window, you either enter MOVE commands at the command prompt, or use the arrow keys defined as MOVE commands. Issuing the command SET FUNCTION MOVE redefines the ↑, ↓, →, and ← arrow keys as MOVE UP 1, MOVE DOWN 1, MOVE RIGHT 1, and MOVE LEFT 1, respectively.

**Note:** The SET FUNCTION MOVE command implicitly sets AUTO\_POSITIONING to OFF.

When you issue a MOVE command, the window changes position by column (horizontally), or by line (vertically). An empty frame appears around the new window position. When you are satisfied with the position of the window, issue the DESELECT command, which moves the window to the new position. Entering another SELECT command before the previous window has been deselected also moves the window to its new position.

## SHOW CLUSTER MOVE

---

### EXAMPLE

```
COMMAND> SET AUTO_POSITIONING OFF  
COMMAND> SELECT CLUSTER  
COMMAND> MOVE RIGHT 10  
COMMAND> DESELECT
```

This command sequence moves the CLUSTER window ten columns to the right.

# SHOW CLUSTER

## PAN

---

## PAN

Pans the display screen.

---

### FORMAT

**PAN** *direction value*

---

#### command parameter

#### *direction*

Direction in which the display is to be panned. If you do not enter a direction for this parameter, SHOW CLUSTER prompts you for one. You must specify one of the following keywords:

UP  
DOWN  
RIGHT  
LEFT

#### *value*

Number of columns or lines the display is to be panned. You must specify a numeric value from 1 to 512. If you do not enter a number for this parameter, SHOW CLUSTER prompts you for one.

---

#### command qualifiers

*None.*

---

### DESCRIPTION

PAN commands pan the entire display by column (horizontally) and by line (vertically). The PAN command functions in a way similar to the panning of a video camera. By issuing PAN commands, a portion of the display that extends beyond the limits of the screen can be brought into view.

The display moves in the opposite direction from that specified by the PAN command. In other words, a PAN LEFT 10 command moves the display 10 columns to the right, similar to the effect of panning a camera over a landscape.

To pan the display, either enter PAN commands at the command prompt, or use the arrow keys defined as PAN commands. Issuing the command SET FUNCTION PAN redefines the ↑, ↓, →, and ← arrow keys as PAN UP 1, PAN DOWN 1, PAN RIGHT 1, and PAN LEFT 1, respectively.

**Note:** If you set the function to PAN, the arrow keys are no longer defined to perform DCL line-mode editing. Only one function can be enabled at a time.

---

### EXAMPLE

COMMAND> PAN DOWN 10

This command sequence pans the display ten lines.



---

## REFRESH

Clears the screen, removes extraneous characters, and updates all fields. Entering CTRL/W has the same effect as typing REFRESH.

---

### FORMAT

### REFRESH

---

#### command parameters

*None.*

---

#### command qualifiers

*None.*

---

### EXAMPLE

COMMAND> REFRESH

This command clears the screen, removes extraneous characters, and updates all fields.

# SHOW CLUSTER

## REMOVE CIRCUITS

---

## REMOVE CIRCUITS

Removes CIRCUITS class information from the SHOW CLUSTER display.

---

### FORMAT

**REMOVE CIRCUITS** *[/qualifier[, . . . ]]*

#### command parameters

*None.*

#### command qualifiers

---

#### **/TYPE=ALL**

Specifies that all types of circuits on each system be removed from the display, including formative, open, and closing circuits. If you specify the REMOVE CIRCUITS command without any qualifiers, all types of circuits are removed from the display by default.

#### **/TYPE=OPEN**

#### **/TYPE=NOOPEN**

Controls whether either open circuits or nonopen circuits are removed from the display.

---

### DESCRIPTION

The REMOVE CIRCUITS command removes CIRCUITS class information from the SHOW CLUSTER display. CIRCUITS class information includes data for all currently enabled fields in the CIRCUITS class. For a list of valid CIRCUITS class fields, see the ADD (Field) command.

---

### EXAMPLES

**1**    **COMMAND> REMOVE CIRCUITS**

This command removes all currently enabled CIRCUITS class fields from the display.

**2**    **COMMAND> REMOVE CIRCUITS/TYPE=OPEN**

This command removes all open circuits from the display.

---

## REMOVE CLUSTER

Removes CLUSTER class information from the SHOW CLUSTER display.

---

### FORMAT

### REMOVE CLUSTER

---

#### command parameters

*None.*

---

#### command qualifiers

*None.*

---

### DESCRIPTION

The REMOVE CLUSTER command removes CLUSTER class information from the SHOW CLUSTER display. CLUSTER class information includes data for all currently enabled fields in the CLUSTER class. For a list of valid CLUSTER class fields, see the ADD (Field) command.

---

### EXAMPLE

COMMAND> REMOVE CLUSTER

This command removes all currently enabled CLUSTER class fields from the SHOW CLUSTER display.

# SHOW CLUSTER

## REMOVE CONNECTIONS

---

## REMOVE CONNECTIONS

Removes CONNECTIONS class information from the SHOW CLUSTER display.

---

### FORMAT

**REMOVE CONNECTIONS** *[/qualifier[, . . . ]]*

#### command parameters

*None.*

#### command qualifiers

---

#### **/TYPE=ALL**

Specifies that all types of connections on each circuit be removed from the SHOW CLUSTER display. If you specify the ADD CONNECTIONS command without any qualifiers, all connections are removed from the display by default.

#### **/TYPE=OPEN**

#### **/TYPE=NOOPEN**

Controls whether either open connections or nonopen connections are removed from the SHOW CLUSTER display.

---

### DESCRIPTION

The REMOVE CONNECTIONS command removes CONNECTIONS class information from the SHOW CLUSTER display. CONNECTIONS class information includes data for all currently enabled fields in the CONNECTIONS class. For a list of valid CONNECTIONS class fields, see the ADD (Field) command.

---

### EXAMPLES

**1**    **COMMAND> REMOVE CONNECTIONS**

The command in this example removes all currently enabled CONNECTIONS class fields from the SHOW CLUSTER display.

**2**    **COMMAND> REMOVE CONNECTIONS/TYPE=OPEN**

The command in this example removes all OPEN connections from the SHOW CLUSTER display.

---

## REMOVE COUNTERS

Removes COUNTERS class information from the SHOW CLUSTER display.

---

### FORMAT

### REMOVE COUNTERS

---

#### command parameters

*None.*

---

#### command qualifiers

*None.*

---

### DESCRIPTION

The REMOVE COUNTERS command removes COUNTERS class information from the SHOW CLUSTER display. COUNTERS class information includes data for all currently enabled fields in the COUNTERS class. For a list of valid COUNTERS class fields, see the ADD (Field) command.

---

### EXAMPLE

**COMMAND>** REMOVE COUNTERS

This command removes all currently enabled COUNTERS class fields from the SHOW CLUSTER display.

# SHOW CLUSTER

## REMOVE CREDITS

---

## REMOVE CREDITS

Removes CREDITS class information from the SHOW CLUSTER display.

---

### FORMAT

### REMOVE CREDITS

#### command parameters

*None.*

#### command qualifiers

*None.*

---

### DESCRIPTION

The REMOVE CREDITS command removes CREDITS class information from the SHOW CLUSTER display. CREDITS class information includes data for all currently enabled fields in the CREDITS class. For a list of valid CREDITS class fields, see the ADD (Field) command.

---

### EXAMPLE

COMMAND> REMOVE CREDITS

This command removes all currently enabled CREDITS class fields from the SHOW CLUSTER display.

---

## REMOVE ERRORS

Removes ERRORS class information from the SHOW CLUSTER display.

---

### FORMAT

### REMOVE ERRORS

#### command parameters

*None.*

#### command qualifiers

*None.*

---

### DESCRIPTION

The REMOVE ERRORS command removes ERRORS class information from the SHOW CLUSTER display. ERRORS class information includes data for all currently enabled fields in the ERRORS class. For a list of valid ERRORS class fields, see the ADD (Field) command.

---

### EXAMPLE

COMMAND> REMOVE ERRORS

This command removes all currently enabled ERRORS class fields.

# SHOW CLUSTER

## REMOVE (Field)

---

## REMOVE (Field)

Disables the display of specific fields of SHOW CLUSTER information.

---

### FORMAT

**REMOVE** *field-name*[, . . . ]

---

### command parameter

#### *field-name*

Specifies one or more fields of information to be removed from the display of a particular class. If you specify more than one field name, insert a comma between each one and the next. For a list of valid field names, see the ADD (Field) command description.

---

### command qualifiers

*None.*

---

## EXAMPLES

1

COMMAND> REMOVE SOFTWARE

This command removes the SYSTEMS class field SOFTWARE from the display.

2

COMMAND> REMOVE SOFTWARE,RP\_TYPE,CON\_STATE

The command in this example removes the SOFTWARE, RP\_TYPE, and CON\_STATE fields from the SHOW CLUSTER display.



---

## REMOVE LOCAL\_PORTS

Removes LOCAL\_PORTS class information from the SHOW CLUSTER display.

---

### FORMAT

### REMOVE LOCAL\_PORTS

#### command parameters

*None.*

#### command qualifiers

*None.*

---

**DESCRIPTION** The REMOVE LOCAL\_PORTS command removes LOCAL\_PORTS class information. For a list of valid LOCAL\_PORTS class fields, see the ADD (Field) command.

---

### EXAMPLE

**COMMAND>** REMOVE LOCAL\_PORTS

This command removes all currently enabled LOCAL\_PORTS class fields from the LOCAL\_PORTS display.

# SHOW CLUSTER

## REMOVE MEMBERS

---

## REMOVE MEMBERS

Removes MEMBERS class information from the SHOW CLUSTER display.

---

### FORMAT

### REMOVE MEMBERS

#### command parameters

*None.*

#### command qualifiers

*None.*

---

### DESCRIPTION

The REMOVE MEMBERS command removes MEMBERS class information from the SHOW CLUSTER display. MEMBERS class information includes data for all actively participating members of the cluster. For a list of valid MEMBERS class fields, see the ADD (Field) command.

---

### EXAMPLE

COMMAND> REMOVE MEMBERS

This command removes all currently enabled MEMBERS class fields from the SHOW CLUSTER display.

---

## REMOVE SYSTEMS

Removes SYSTEMS class information from the SHOW CLUSTER display.

---

### FORMAT

**REMOVE SYSTEMS** *[/qualifier[, . . . ]]*

#### command parameters

*None.*

#### command qualifiers

---

##### ***/ID=system-id***

Specifies, by system identification number, systems to be removed from the SHOW CLUSTER display. The system identification number can be any system identification as displayed in the SYSID field of the SYSTEMS class of the CLUSTER report.

The /ID qualifier affects all information displayed about the specified system, not just information in the SYSTEMS class display.

##### ***/NODE=node-name***

Specifies, by node name, systems to be removed from the SHOW CLUSTER display. The /NODE qualifier affects all information displayed about the specified node, not just information in the SYSTEMS class display.

##### ***/TYPE=hardware-type***

Specifies, by hardware type, systems to be removed from the SHOW CLUSTER display. You can specify any of the following hardware types:

- V750 for VAX-11/750 systems
- V780 for VAX-11/780 systems
- V785 for VAX-11/785 systems
- HS50 for HSC50 systems
- 8200 for VAX 8200 systems
- 8600 for VAX 8600 systems

The /TYPE qualifier affects all information displayed about the specified hardware type, not just information in the SYSTEMS class display.

---

### DESCRIPTION

The REMOVE SYSTEMS command removes SYSTEMS class information from the SHOW CLUSTER display. SYSTEMS class information includes data for all currently enabled fields in the SYSTEMS class. For a list of valid SYSTEMS class fields, see the ADD (Field) command.

# SHOW CLUSTER

## REMOVE SYSTEMS

---

### EXAMPLES

1

COMMAND> REMOVE SYSTEMS

This command removes all currently enabled SYSTEMS class fields from the SHOW CLUSTER display.

2

COMMAND> REMOVE SYSTEMS/TYPE=V780

This command removes all VAX-11/780 systems from the SHOW CLUSTER display.

---

## SAVE

Allows you to build a command procedure based on the current display. You can then use the command procedure to format subsequent displays.

---

### FORMAT

**SAVE** [*file-spec*]

#### command parameter

---

#### *file-spec*

File specification of the command file. The file name defaults to SHOW\_CLUSTER.COM. Since the file is an ASCII file, you can edit it.

#### command qualifiers

*None.*

---

### DESCRIPTION

The SAVE command allows you to build a command procedure that you can use in subsequent SHOW CLUSTER sessions. To use the SAVE command:

- 1 Customize the display to meet your needs by using SHOW CLUSTER commands.
- 2 Enter the SAVE command. By default, the command procedure created is named SHOW\_CLUSTER.COM. If you want a name that is different from the default, specify the alternate name on the SAVE command line.

The file that results from the SAVE command is an ASCII file. You can edit the file to add comments or to improve its efficiency. In some cases, a particular command procedure may not be as efficient as possible because the commands that the SAVE command builds are restricted to one record. For example, the SAVE command processes "ADD class", "ADD class /ALL", and "ADD (Field)" commands separately. It does not combine an "ADD class" and an "ADD (Field)" command to produce the command "ADD class,field".

Additionally, the SAVE command does not use the "REMOVE (Field)" command. For example, the following command sequence adds all fields in the circuits class and then removes one field in the circuit class:

```
ADD CIRCUITS/ALL
REMOVE RP_TYPE
```

Subsequently using the SAVE command produces a file with commands that add every field in the circuits class except RP\_TYPE:

```
ADD LPORT_NAME,REPORT_NUM,RP_OWNER,NUM_CONNECTIONS,CIR_STATE
ADD REM_STATE,CABLE_STATUS,RP_REVISION,RP_FUNCTIONS,SCS_WAITERS
```

# SHOW CLUSTER

## SAVE

---

### EXAMPLE

```
COMMAND> ADD CLUSTER  
COMMAND> REMOVE SOFTWARE  
COMMAND> SAVE
```

The first two commands customize the SHOW CLUSTER display. The third command, SAVE, creates a command file, SHOW\_CLUSTER.COM, which contains the following commands:

```
INITIALIZE  
ADD CLUSTER  
REMOVE SYSTEMS  
ADD NODE
```

## SCROLL

Scrolls a selected window.

### FORMAT

**SCROLL** *direction value*

#### command parameter

#### *direction*

Direction in which a window is to be scrolled. If you do not enter a direction for this parameter, SHOW CLUSTER prompts you for one. You must specify one of the following keywords:

UP  
DOWN  
RIGHT  
LEFT

#### *value*

Number of fields or lines a window is to be scrolled. You must specify a numeric value from 1 to 512. If you do not enter a number for this parameter, SHOW CLUSTER prompts you for one.

#### command qualifiers

*None.*

### DESCRIPTION

The SCROLL command provides a means of quickly scanning through a window by field (horizontally) and by line (vertically). You can scroll windows independently. Note, however, that if AUTO\_POSITIONING is set to ON, other windows in the display may change position as you scroll the selected window.

To scroll a window, you must first select a window by issuing the SELECT command. The selected window is highlighted. You issue SCROLL commands either by entering them at the command line or by pressing the arrow keys. Issuing the command SET FUNCTION SCROLL redefines the ↑, ↓, →, and ← arrow keys as SCROLL UP 1, SCROLL DOWN 1, SCROLL RIGHT 1, and SCROLL LEFT 1, respectively.

Use the vertical and horizontal lines of the window fields as indicators of the current position of the display. Note that the window headings remain stationary as lines of data are scrolled vertically.

### EXAMPLE

```
COMMAND> SELECT SCS
COMMAND> SCROLL UP 10
COMMAND> DESELECT
```

This command sequence scrolls the SCS window up ten lines.

# SHOW CLUSTER

## SELECT

---

## SELECT

Selects a window to be scrolled or moved.

---

### FORMAT

**SELECT** [*window-name*]

---

### command parameter

#### ***window-name***

The name of the selected window. You can specify one of the following window names: SCS, LOCAL\_PORTS, or CLUSTER.

---

### command qualifiers

*None.*

---

### DESCRIPTION

You select a window either by issuing a SELECT command at the command line prompt, or by pressing the SELECT key on the default keypad.

If you press the SELECT key on the keypad or issue the SELECT command without specifying the window name, SHOW CLUSTER selects a window for you. Pressing the SELECT key repeatedly cycles through the windows in the order in which they were initially added to the screen. Each subsequent SELECT command terminates the previous one. The currently selected window is highlighted. When the last window in the cycle has been selected, pressing the SELECT key another time begins the cycle again.

You use the SELECT command to identify a window to be moved or scrolled. By default, no window is selected and the function is set to EDIT. For more information, see the SET FUNCTION, SCROLL, and MOVE commands.

---

### EXAMPLE

COMMAND> SELECT LOCAL\_PORTS

This command sequence selects the LOCAL\_PORTS window. You can then perform a MOVE or SCROLL operation on the selected window.



---

## SET AUTO\_POSITIONING

Enables or disables the automatic positioning of windows within a display.

---

### FORMAT

**SET AUTO\_POSITIONING** *keyword*

---

#### command parameter

#### **keyword**

Specifies whether or not windows are automatically positioned within a display. By default, SHOW CLUSTER operates with AUTO\_POSITIONING enabled. Valid keywords are:

ON  
OFF

---

#### command qualifiers

*None.*

---

### DESCRIPTION

By default, SHOW CLUSTER automatically positions windows based on their size and the order in which they were originally added to the display. With AUTO\_POSITIONING set to ON, windows do not overlap, but they may extend partially or fully beyond the physical limits of the terminal screen.

Setting AUTO\_POSITIONING to OFF allows you to control the position of a window within the display. When you use MOVE commands to position a selected window manually, the windows are allowed to overlap. For additional information on moving windows, see the MOVE and SET FUNCTION commands and Section 3.5.3.

**Note:** Setting the function to MOVE implicitly disables AUTO\_POSITIONING.

---

### EXAMPLE

```
COMMAND> SET AUTO_POSITIONING OFF
COMMAND> SELECT CLUSTER
COMMAND> MOVE RIGHT 5
COMMAND> MOVE DOWN 10
COMMAND> DESELECT
```

This command sequence disables AUTO\_POSITIONING, selects the CLUSTER window, and moves it to a new position in the display.

# SHOW CLUSTER

## SET (Field)

---

## SET (Field)

Modifies the characteristics of particular fields within the display.

---

### FORMAT

**SET** *field-name* /*qualifier*[, . . . ]

### command parameter

---

#### *field-name*

Specifies the name of the field to be modified in the display. For a list of field names, see the ADD (Field) command.

### command qualifiers

---

#### **/WIDTH = field-width**

Specifies the number of columns used to display the specified field. This qualifier lets you shrink the display to allow room for more fields or expand it to make it easier to read.

Minimum, maximum, and default values for field widths are set up internally. If you specify a field width of 0, the field is set to its minimum width. If you specify a field width that is larger than the internal maximum width, the field is set to its maximum width.

**Note:** If the field width is too narrow to display a particular numeric field, asterisks are displayed in place of the data; if the width is too narrow to display a character string field, the character string is truncated on the right.

#### **/FORMAT = radix**

Specifies the display format used to display the specified field. You can specify either of the following radix values:

- DECIMAL for decimal format
- HEXADECIMAL for hexadecimal format

A hexadecimal display for a field uses fewer columns than a decimal display. Changing the field format, however, does not change the field width until you specify the next SET (Field) command.

The hardware version field (HW\_VERSION) is always displayed in 24 hexadecimal digits.

---

## EXAMPLE

COMMAND> SET SYSID/FORMAT=HEXADECIMAL

This command sets the format of the SYSID field to a hexadecimal display.

---

## SET FUNCTION

Enables one of the following SHOW CLUSTER functions: EDIT, MOVE, PAN, or SCROLL.

---

### FORMAT

**SET FUNCTION** *function-name*

---

#### command parameter

#### ***function-name***

Specifies the SHOW CLUSTER function to be enabled. By default, the EDIT function is enabled. Functions include:

EDIT  
MOVE  
PAN  
SCROLL

---

#### command qualifiers

*None.*

---

### DESCRIPTION

The SET FUNCTION command redefines the arrow keys to perform the specified function. By default, the function is set to EDIT, which allows you to use the arrow keys to recall a previously issued command or perform DCL line-mode editing at the command prompt. (See the *VAX/VMS DCL Concepts Manual* for more information on DCL line-mode editing.)

To enable one of the SHOW CLUSTER functions, you either issue the specific SET FUNCTION command at the command prompt, or press the appropriate SET FUNCTION key on the keypad. Only one function can be enabled at a time.

**Note:** Setting the function to MOVE implicitly disables AUTO\_POSITIONING.

---

### EXAMPLE

```
COMMAND> SET FUNCTION MOVE
COMMAND> SELECT SCS
COMMAND> MOVE RIGHT 10
COMMAND> DESELECT
COMMAND> SET FUNCTION SCROLL
```

This command sequence sets the function to MOVE and moves the SCS window 10 columns to the right. The window is then deselected, and the function is set to SCROLL. The arrow keys are now redefined to function as SCROLL commands.

# SHOW CLUSTER

## SET INTERVAL

---

## SET INTERVAL

Changes the interval time between display updates. The interval time is the amount of time that display information remains on the screen before it is updated. By default, the display updates every 15 seconds, unless you use the /INTERVAL qualifier on the SHOW CLUSTER command. If you use the /INTERVAL qualifier on the SHOW CLUSTER command, the time specified becomes the default.

---

### FORMAT

**SET INTERVAL=***seconds*

---

### command parameter

***seconds***

The number of seconds between display updates.

---

### command qualifiers

*None.*

---

## EXAMPLE

COMMAND> SET INTERVAL=5

This command changes the display interval time to five seconds.

---

## SET SCREEN

Sets the terminal to a display of up to 512 columns. This command can be used only on a DIGITAL-compatible terminal.

---

### FORMAT

**SET SCREEN=***screen-width*

---

#### command parameter

#### *screen-width*

Specifies the width of the screen display. You can specify a value up to 512.

---

#### command qualifiers

*None.*

---

### EXAMPLE

COMMAND> SET SCREEN=132

This command sets the screen width to 132 columns.

# SHOW CLUSTER

## WRITE

---

## WRITE

Outputs the current display to a file which can be printed on a hardcopy device.

---

### FORMAT

**WRITE** *[file-spec]*

---

#### command parameter

#### *file-spec*

File specification of the printable output file. By default, the output filename is SHOW\_CLUSTER.LIS.

---

#### command qualifiers

#### */ALL*

Indicates that the output file should contain a display consisting of all classes and all fields. Because SHOW CLUSTER may not currently have the information necessary to display all the possible fields when you specify /ALL qualifier, a display update occurs prior to the output of the file. As a result, the output file may differ from the display currently on the terminal screen.

You should use the /ALL qualifier to produce an output file or hardcopy file when reporting a cluster-related problem to DIGITAL.

---

## EXAMPLE

COMMAND> WRITE/ALL

This command creates a file, SHOW\_CLUSTER.LIS, which contains all possible SHOW CLUSTER fields. SHOW\_CLUSTER.LIS can be printed on a hardcopy device.

---

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---

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## NOTES



